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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/021,314	12/19/2001	Masaru Atsumi	P 290493 T2TT-01S0439-1	9385

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EXAMINER	
FIGUEROA, NATALIA	
ART UNIT	**PAPER NUMBER**
2651	9

DATE MAILED: 05/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/021,314	Applicant(s) ATSUMI, MASARU	
	Examiner Natalia Figueroa	Art Unit 2651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 December 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4,6-14 and 16-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4,6-14 and 16-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-2, 6-9, 12-14, 16 and 19-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Hiroaki (PAJ Publication No. 10-177774).

Regarding claim 1: Hiroaki discloses a disk drive comprising:

a head constructed and arranged to fly above the surface of a rotating disk for reading or writing data on the disk [0009]; a collision monitor which detects continuous (or continual?) contact of the head with the surface of the disk [0012]; a sensor which detects disturbance [0016]; and a controller for, which performs head contact avoidance operation for changing a floating state of the head and restoring a normal floating state of the head when contact, according to predetermined criteria, of the head with the surface of the disk is detected by the collision monitor and disturbance is detected by the sensor [0012-0013 and 0018].

Regarding claim 2: Hiroaki further discloses a disk drive where the controller performs the contact avoidance operation by increasing the rotational speed of the disk above its normal rotational speed to thereby increase the flying height of the head above the rotating disk and restoring normal rotational speed to the disk [0012-0013].

Regarding claim 6: Hiroaki further discloses a disk drive where the controller includes storage means for storing the frequency at which the contact avoidance operation is performed

and, when the frequency of the contact avoidance operation is beyond a permissible range, carries out a given emergency operation [0039 and 0043].

Regarding claim 7: Hiroaki further discloses a disk drive where the collision monitor determines that the head is continuous contact with the surface of the disk on the basis of a change in a read signal corresponding to servo data prerecorded on the disk when it is read by the head [0048].

Regarding claim 8: Hiroaki further discloses a disk drive where the sensor is one for sensing air pressure [0043].

Regarding claim 9: Hiroaki further discloses a disk drive where the controller carries out a given emergency operation in the event that the sensor detects, as the disturbance, air pressure outside a permissible range which is abnormally low in comparison with the standard air pressure [0045].

Regarding claim 12: Hiroaki further discloses a disk drive where the sensor is one for detecting ambient temperature [0043].

Regarding claim 13: Hiroaki further discloses a disk drive where the controller carries out a given emergency operation in the event that the sensor detects, as the disturbance, temperature outside a permissible range which is abnormal in comparison with the standard temperature [0035 and 0045].

Regarding claims 14 and 16: Method claims 14 and 16 are drawn to the method of using the corresponding apparatus claimed in claims 1 and 9. Therefore method claims 14 and 16 correspond to apparatus claims 1 and 9 and are rejected for the same reasons of anticipation as used above.

Regarding claim 19: Method claim 19 is drawn to the method of using the corresponding apparatus claimed in claim 2. Therefore method claim 19 corresponds to apparatus claim 2 and is rejected for the same reasons of anticipation as used above.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hiroaki in view of Uchiike et al. (6236527).

Regarding claim 4: Hiroaki is relied for the same reasons as stated in the above rejections. Hiroaki fails to explicitly teach a disk drive where the controller performs the contact avoidance operation by carrying out an unload operation of moving the head to a rest position outside the disk from an operating position above the disk, a load operation of returning the head from the rest position to the operating position.

However, Uchiike et al. disclose such on (col. 1, lines 46-49 and col. 4, lines 24-25). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus as disclosed by Hiroaki with the above teachings from Uchiike et al. to retract the heads when a disturbance is encountered, hence avoiding damage and failure of the disc.

3. Claims 10-11 and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiroaki in view of Uchiike et al. and further in view of Ottensen et al. (6067203).

Regarding claim 10: Hiroaki and Uchiike et al. are relied for the same reasons as stated in the above rejections. Hiroaki and Uchiike et al. fail to explicitly teach a disk drive where the controller the sensor is an acceleration sensor for detecting an externally applied shock.

However, Ottensen et al. disclose such on (col. 5, lines 66-67). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus as disclosed by Hiroaki with the above teachings from Ottensen et al. to include an accelerometer that would monitor the acceleration in the disc, hence indicating vibrations and shocks therefore avoiding damage and failure of the disk.

Regarding claim 11: Hiroaki and Uchiike et al. are relied for the same reasons as stated in the above rejections. Uchiike et al. further disclose a disk drive where the controller performs an emergency operation of stopping the move control of the head at the start of the contact avoidance operation and, in the event that a shock is detected by the acceleration sensor, performing a forced unload operation of forcibly moving the head to a given position outside the disk (col. 4, lines 10-14).

Regarding claims 17-18: Method claims 17-18 are drawn to the method of using the corresponding apparatus claimed in claim 11. Therefore method claims 17-18 correspond to apparatus claim 11 and are rejected for the same reasons of anticipation as used above.

Response to Arguments

4. Applicant's arguments filed 9 December 2003 have been fully considered but they are not persuasive.

Applicant's argument states "Applicant's present invention calls for a controller that restores the normal rotating speed...". Applicant's argument is not persuasive since it is not drawn to the claimed subject matter.

Applicant also argues "Applicant's present invention can recover the head from being in continuous contact with the surface of the disk by temporarily changing ...". Applicant's argument is not persuasive because "temporary" is not recited in the claim, and certainly not within the context of temporarily changing the floating state of the head in a continual low-pressure state.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Natalia Figueroa whose telephone number is (703) 305-1260. The examiner can normally be reached on Monday - Thursday 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R. Hudspeth can be reached on (703) 308-4825. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

NFM

DAVID HUDSPETH
SUPERVISORY PATENT EXAMINER
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